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ABSTRACT

To better understand the development of noncompensatory strategy use for decisions involving social and nonsocial objects, a decision board technique was used to trace the information acquisition process of 88 second-, fifth-, and eighth-graders. Findings indicated that second-graders searched the decision board (a matrix with 24 squares of hidden information) much less efficiently than older children. Eighth-graders searched in a pattern much like that of adults. Developmental differences were also noted in that eighth-graders searched more systematically, selectively, and strategically than fifth- or second-graders. However, results indicated that even young children had the ability and propensity to alter their decision strategies based on characteristics of the decision task. Results suggest that presenting information about decision objects in a form in which they are most commonly encountered affects children's ability to focus on relevant information, a skill often involved in the use of adult decision strategies. (KB)

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Children's Collection and Use of Predecisional Information for Social and Nonsocial Decisions

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Abstract

To better understand the development of noncompensatory strategy use for decisions involving social and nonsocial objects, a decision board technique was used to trace the information acquisition process of 88 second-, fifth-, and eighth-grade children. It was found that second-graders searched much less efficiently than older children, while eighth-graders searched in a pattern much like that of adults. Developmental differences were also noted in that eighth - graders searched more systematically, selectively, and strategically than fifth- or second-graders. However, results suggest that even young children have the ability and propensity to alter their decision strategies based on characteristics of the decision task.

In addition, evidence from the present study suggests that presenting information about decision objects in a form in which they are most commonly encountered has a significant impact on some important aspects of even young children's decision behavior. Most notably, it seems to affect children's ability to focus on relevant information, a skill that is often involved in the use of adult decision strategies (i.e., noncompensatory strategies).

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Introduction

The purpose of this research was to examine, with a decision board procedure, the effects of the "socialness" of a decision object and the way in which information is displayed on the information acquisition patterns and decision making behavior (i.e. use of noncompensatory

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strategies) of grade school children. The decision board procedure has been used regularly to assess decision making abilities among adults (see Ford, Schmitt, Schectman, Hults, & Doherty, 1989, for a review) and children alike (Davidson, 1991a, 1991b; Davidson & Hudson, 1988; Klayman, 1985). However, previous research has never used the decision board procedure to directly compare children's decision making for social and nonsocial objects. In fact, the decision board procedure has been largely limited to use for decisions about nonsocial objects overall. The purpose of the present study was to determine if the developmental trends that have been found in children's decision making for nonsocial decisions hold true when the object of a decision is social in nature (i.e. a person) and if the way in which information is displayed/presented affects information search and decision behavior.

A consistent pattern has been identified with regard to how children collect information for decisions about everyday objects. For the most part, young children search for information in a somewhat haphazard manner and indiscriminately, with virtually no logical pattern or regard for the relevance of the information (Davidson, 1991a; 1991b; Klayman, 1985; Miller, 1990). At about the age of 12, children show signs of using more advanced information acquisition and decision strategies; their search patterns become more logical and confined to relevant information (Klayman, 1985). By early adolescence, children have been shown to have at their disposal many of the advanced information search and decision strategies that are used by adults (e.g., non-compensatory strategies). In essence, noncompensatory strategies are used by adults as a heuristic when the amount of information to be processed is great and utilize a decision rule whereby a low value on one attribute cannot be compensated for by a high value on one or more other attributes. Thus, in order to reduce the cognitive demands of considering all attributes of all alternatives in a choice set, objects are eliminated from consideration on the basis of a single substandard attribute (Beach & Mitchell, 1978).

However, while much has been studied with regard to how differences in decision tasks affect adult information search processes and decision making (see Payne, Bettman, & Johnson, 1992, for a review), studies of children are more rare. Of the decision research that has involved children, none have directly compared children's information search and decision strategies for social and nonsocial objects with a process tracing method such as the decision board technique.

Method

Subjects and Procedure: Thirty second graders (mean age 7:10), 29 fifth graders (mean age 10:9), and 29 eighth graders (mean age 13:9) from parochial schools in Chicago, Illinois and Green Bay, Wisconsin participated in the study.

Four decision boards were constructed, each consisting of a matrix of information with 6 rows (alternatives) and 4 columns (attribute dimensions that describe the alternatives), yielding 24 pieces of hidden information in each matrix. Each alternative had a combination of low, medium, or high values on the dimensions, with one alternative (with more positive attributes) being clearly superior to the others. Four experimental decision boards were constructed that varied as to the decision object (bicycle or a prospective playmate) and the format in which the information was presented (single characteristic/trait or short vignette). The within-subjects design required children to make four decisions, one for each decision board (social-characteristic, social-vignette, nonsocial-characteristic, nonsocial-vignette). Children were asked to unveil as much information as they needed to make a good decision about a bicycle that they would most like to have or a child with whom they would most like to play. Once information was revealed, it remained visible until a decision was made by the child. Rating scales were used to determine which dimensions were most personally relevant to each child.

Social (playmate) and nonsocial (bicycle) boards were also "standardized" so that each alternative on a social board had a corresponding paired alternative on a nonsocial board. The positions in which the alternatives and dimensions appeared on the decision boards were not the same for any of the boards.

Results and Conclusions

Noncompensatory strategies were thought to require three distinct abilities; systematic search of information, selectivity in accessing only relevant information, and (most characteristic of noncompensatory strategies) interactivity with the information (i.e., using the information from the board to guide the search). The measure used to assess the systematicity of children's information searches was the proportion of total search pattern transitions that were intradimensional or interdimensional (versus shifts). Search selectivity was indexed by the proportion of information searching that was done on the predetermined relevant dimension. Search interactivity was operationalized as the amount of information searched (search depth), the variability in the number of cues accessed per alternative (search variability), and the frequency with which the predetermined superior alternative was chosen (decision accuracy). Mixed-model analyses of variance procedures, with appropriate Huynh and Feldt's corrections, were performed on the data collected from the children's searches. Results revealed that similar developmental effects for both object types in that the information searches of eighth graders were consistently more systematic, selective, and interactive (i.e., more indicative of noncompensatory strategy use) than those of second graders, with fifth graders falling in between (see Figure 1 and Tables 1-4). The only variable for which a main effect of grade was not found was decision accuracy (virtually all children chose the correct alternative).

More interestingly, search selectivity was affected by an interaction between object type and presentation format in that children spent a greater proportion of their information searches on the relevant dimension when decisions for social objects (playmates) were presented as vignettes and when nonsocial objects (bicycles) as characteristics (Table 2, p's $< .05$). Similar effects were found for search depth in that children tended to access more information when playmate information was presented as a characteristic and bicycle information as a vignette. However, no such effects were found for the other interactivity variables (i.e., variability of search and decision accuracy).

These results suggest that, like those for nonsocial object, information search and decision behavior for social objects follows a distinct developmental pattern, with second graders searching rather haphazardly, fifth graders more logically and with some focus on relevant information, and eighth graders showing signs of using complex adult-like decision strategies.

In addition, while the "socialness" of a decision object alone does not seem to significantly affect information search and decision behavior, such behavior is affected by a combination of object type and the way in which decision information is presented. Specifically, presenting social information in vignette (versus characteristic) form and presenting nonsocial information in characteristic (versus vignette form) seems to help even second grade children focus on relevant information. While presenting information in its "correct" form does not foster children to search information more interactively or even more systematically, it does help children to maintain general attention to relevant information. Results of this research may have implications for how teachers, parents, and even marketers present information about social and nonsocial objects to children.

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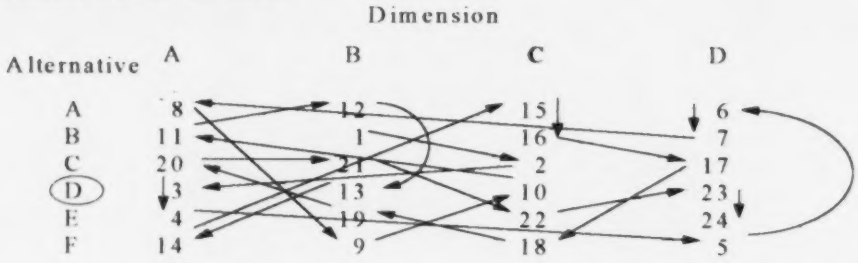
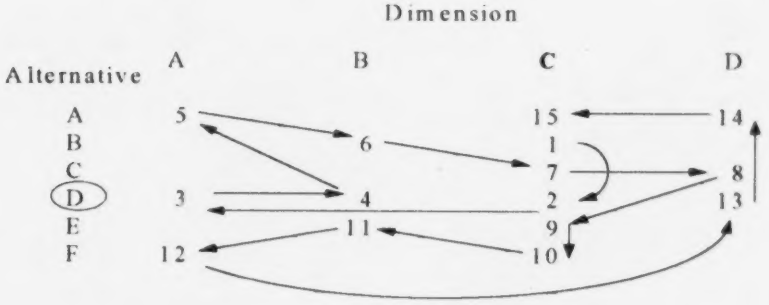
Figure 1
Prototypical Search Patters of Second, Fifth, and Eighth Grade Children
Circled letters represent superior alternatives
Letters in bold represent the most relevant dimension

Second Grade Children



Fifth Grade Children



Eighth Grade Children

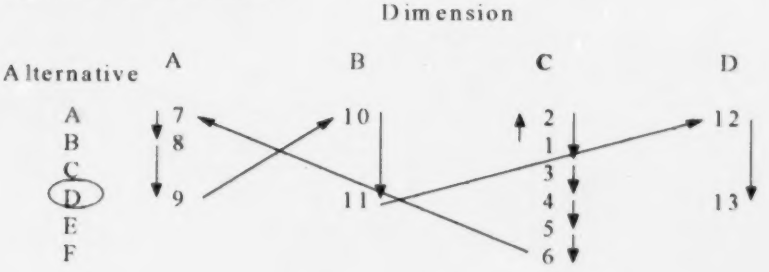


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Table 1
Mean Percent of Intra/Interdimensional Transitions

	Grade			
	2	5	8	Mean
Board Type				
Social				
Characteristic	.61	.70	.70	.67
Vignette	.59	.69	.72	.67
Nonsocial				
Characteristic	.62	.69	.72	.68
Vignette	.59	.69	.71	.66
Mean	.60	.69	.71	.67

Table 2
Mean Percent of Searching Done on the Relevant Dimension

	Grade			
	2	5	8	Mean
Board Type				
Social				
Characteristic	.30	.31	.35	.32
Vignette	.34	.36	.42	.37
Nonsocial				
Characteristic	.31	.39	.46	.39
Vignette	.29	.35	.40	.35
Mean	.31	.35	.41	.35

Table 3
Mean Number of Cues Accessed Per Decision

	Grade			
	2	5	8	Mean
Board Type				
Social				
Characteristic	13.90	11.21	11.21	12.13
Vignette	12.33	10.21	9.34	10.65
Nonsocial				
Characteristic	12.76	10.03	9.41	10.73
Vignette	13.23	11.17	9.86	11.42
Mean	13.06	10.66	9.96	11.23

Table 4
Standard Deviation of Cues Accessed Per Alternative

	Grade			
	2	5	8	Mean
Board Type				
Social				
Characteristic	0.77	1.08	1.20	1.01
Vignette	0.92	1.04	1.19	1.04
Nonsocial				
Characteristic	0.87	1.07	1.18	1.00
Vignette	0.98	1.19	1.09	1.08
Mean	0.88	1.10	1.16	1.05